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ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2  
14823AT LANCE, MISSILE NUMBER 4570, ROUND NUMBER 347-AST, 9 MAY--ETC(U)  
MAY 80

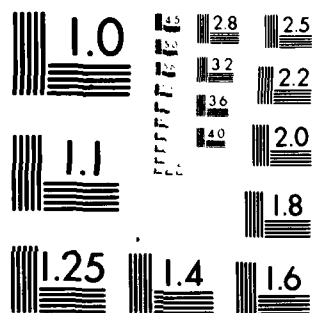
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METEOROLOGICAL DATA REPORT

14823AT LANCE  
Missile Number 4570  
Round Number 347-AST  
9 May 1980

by

White Sands Meteorological Team

DTIC  
ELECTE  
JUL 1 1980

ATMOSPHERIC SCIENCES LABORATORY  
WHITE SANDS MISSILE RANGE, NEW MEXICO

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of 14843AT LANCE, Missile Number 4570, Round Number 347-AST are presented in tabular form. 710663		

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## INTRODUCTION

14823AT LANCE, Missile Number 4570, Round Number 347-AST,  
was launched from LC-39, White Sands Missile Range (WSMR), New Mexico,  
at 1308 MDT on 9 May 1980. The scheduled launch time was  
1300 MDT.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

### 1. Observations

#### a. Surface

(1) Standard surface observations to include pressure, temperature ( $^{\circ}\text{C}$ ), relative humidity, dew point ( $^{\circ}\text{C}$ ), density ( $\text{gm}/\text{m}^3$ ), Wind direction and speed, and cloud cover were made at the LC-39 Met Site at T-0 minutes.

(2)

Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

#### b. Upper Air

(1) Low level wind data were obtained from RAPIR T-9 pibal observation at:

## SITE AND ALTITUDE

**LC-39 2220 Meters**

**LC-39 3660 Meters**

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to as high as possible feet in 500-foot increments.

## SITE AND TIME

**WSD 1300 MDT**

**SMR 1300 MDT**

**HMN 1300 MDT**



TABLE 1. Surface Observations taken at 1308 MDT,  
9 May 1980, at LC-39, 14823AT LANCE,  
Missile Number 4570, Round Number 347-AST.

ELEVATION	4063.75	FT/MSL
PRESSURE	873.2	MBS
TEMPERATURE	25.0	<sup>o</sup> C
RELATIVE HUMIDITY	20	
DEW POINT	0.5	<sup>o</sup> C
DENSITY	1016	GM/M <sup>3</sup>
WIND SPEED	10	KTS
WIND DIRECTION	270	DEGREES
CLOUD COVER	1	ci

## PILOT BALLOON MEASURED WIND DATA

TABLE 2

RELEASED FROM LC-39 DATE 9 May 1980 TIME 1250 MDT

RELEASED POINT COORDINATES (WSTM) X= 530938.82 Y= 186564.96 H= 4063.75

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

HEIGHTS ARE METERS AGL XX OR FEET AGL .

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	270	10
60	MISG	MISG
120	250	12
180	254	13
240	261	18
300	254	18
360	254	18
420	238	13
480	237	12
540	237	12
600	233	14
660	243	15
720	238	13
780	227	15
840	219	12
900	208	12
960	213	15
1020	199	18
1080	199	14
1140	218	18
1200	210	22
1260	211	21
1320	210	18
1380	221	21
1440	223	18
1500	223	18
1560	222	20
1620	231	20
1680	229	20
1740	238	18
1800	235	19

[illegible][illegible]

# PILOT BALLOON MEASURED WIND DATA

TABLE 3

RELEASED FROM LC-39 DATE 9 May 1980 TIME 1330 MDT  
 RELEASED POINT COORDINATES (WSTM) X 530,938.82 Y 186,564.96 H 4063.75

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

HEIGHTS ARE METERS AGL XX OR FEET AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	290	17	1860	236	18			
60	267	19	1920	237	17			
120	240	21	1980	237	17			
180	235	19	2040	237	17			
240	244	20	2100	239	20			
300	240	20	2160	239	21			
360	233	20	2220	235	26			
420	229	18	2280	247	24			
480	231	18	2340	243	13			
540	233	18	2400	244	13			
600	233	18	2460	264	17			
660	239	17	2520	248	18			
720	231	15	2580	249	17			
780	238	16	2640	247	18			
840	240	15	2700	258	24			
900	228	17	2760	250	28			
960	234	18	2820	250	32			
1020	229	17	2880	249	35			
1080	229	17	2940	249	35			
1140	255	18	3000	247	35			
1200	246	15	3060	247	35			
1260	243	15	3120	250	35			
1320	249	13	3180	250	35			
1380	236	13	3240	248	32			
1440	235	15	3300	253	31			
1500	233	17	3360	254	23			
1560	233	15	3420	252	28			
1620	243	13	3480	251	29			
1680	232	15	3540	250	30			
1740	236	12	3600	249	31			
1800	235	12	3660	249	33			

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

SIGNIFICANT LEVEL DATA  
1300020257  
WHITE SANDS

TABLE 4

STATION ALTITUDE 3989.00 FEET MSL  
9 MAY 80  
ASCENSION NO. 257

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR DEGREES	DEWPOINT CENTIGRADE	
875.1	26.1	.7	19.0
850.0	22.4	.9	24.0
700.0	6.6	-6.7	30.0
649.4	1.2	-9.1	46.0
640.6	.0	-7.7	56.0
627.5	-1.6	-7.9	62.0
618.6	-2.4	-12.1	47.0
614.2	-2.2	-21.5	21.0
588.4	-3.2	-25.4	16.0
571.4	-4.0	-20.0	16.0
500.0	-10.6	-30.6	17.0
467.0	-14.2	-27.0	31.0
400.0	-23.7	-36.0	31.0
380.0	-26.8	-36.1	33.0
359.6	-28.7	-42.1	26.0
333.4	-33.4	-47.7	22.0
320.6	-36.0	-49.9	22.0
300.0	-40.2		
260.8	-47.5		
255.2	-47.9		
250.0	-47.5		
244.2	-47.8		
226.3	-51.7		
200.0	-50.9		
189.2	-50.2		
180.0	-50.3		
166.8	-52.4		
150.0	-57.0		
134.4	-60.8		
115.8	-66.1		
100.0	-68.4		
91.4	-68.4		
83.6	-60.4		
77.8	-63.2		
70.0	-63.7		
58.6	-60.1		
50.0	-59.6		
30.0	-52.0		
23.4	-45.7		
21.0	-45.0		

STATION ALTITUDE 3989.00 FEET MSL  
 9 MAY 80  
 ASCENSION NO. 257

SIGNIFICANT LEVEL DATA  
 1300020237  
 WHITE SANDS

TABLE 4 (continued)

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
20.0 88070.9	-43.3	
16.6 92245.1	-41.0	

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LONG DEG

STATION ALTITUDE 3989.00 FEET MSL  
 9 MAY 80 1300 MDT  
 ASCENSION NO. 257

UPPER AIR DATA  
 1300020257  
 WHITE SANDS  
 TABLE 5

GEODETIC COORDINATES  
 32.40043 LAT N  
 106.37033 LONG W

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CURIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3989.0	875.1	26.1	.7	19.0	1015.9	674.9	260.0	12.0	1.000254
4000.0	874.8	26.1	.7	19.1	1015.7	674.8			1.000254
4500.0	859.7	23.8	.9	22.1	1005.5	672.3			1.000252
5000.0	844.6	21.9	.7	24.5	994.4	670.1			1.000250
5500.0	829.5	20.4	.2	25.8	981.6	668.4			1.000246
6000.0	814.7	19.0	-.4	27.1	969.0	666.7			1.000242
6500.0	800.2	17.5	-1.0	28.4	956.5	665.0			1.000239
7000.0	785.9	16.0	-1.7	29.7	944.3	663.3			1.000235
7500.0	771.8	14.6	-2.4	31.0	932.2	661.6			1.000231
8000.0	758.1	13.1	-3.1	32.3	920.4	659.9			1.000228
8500.0	744.5	11.6	-3.9	33.6	908.7	658.2			1.000224
9000.0	731.2	10.2	-4.7	34.9	897.1	656.5			1.000220
9500.0	718.2	8.7	-5.5	36.2	885.8	654.7			1.000217
10000.0	705.3	7.2	-6.3	37.5	874.6	653.0	216.6	10.8	1.000213
10500.0	692.5	5.8	-7.0	39.2	863.0	651.3	218.0	10.5	1.000210
11000.0	679.6	4.5	-7.6	41.2	851.2	649.7	220.4	10.2	1.000207
11500.0	667.0	3.1	-8.2	43.1	839.5	648.1	223.1	10.2	1.000203
12000.0	654.7	1.8	-8.8	45.1	828.0	646.5	224.6	12.1	1.000200
12500.0	642.4	.3	-8.0	53.9	817.0	644.8	239.3	14.1	1.000199
13000.0	630.3	-1.3	-7.9	60.7	806.0	643.0	247.6	18.9	1.000197
13500.0	618.4	-2.4	-12.4	45.9	794.5	641.5	253.7	24.9	1.000199
14000.0	606.7	-2.5	-12.6	19.6	780.3	641.1	256.7	32.9	1.000179
14500.0	595.1	-2.9	-24.3	17.3	766.6	640.6	257.0	36.5	1.000175
15000.0	583.8	-3.4	-25.6	16.0	753.6	640.0	258.4	35.5	1.000172
15500.0	572.7	-3.9	-26.0	16.0	740.7	639.4	255.9	31.8	1.000169
16000.0	561.6	-4.9	-26.7	16.1	728.9	638.3	257.9	30.0	1.000166
16500.0	550.8	-5.8	-27.4	16.3	717.4	637.1	262.7	29.1	1.000163
17000.0	540.1	-6.8	-28.0	16.4	706.1	636.0	269.4	29.3	1.000161
17500.0	529.7	-7.8	-28.8	16.6	695.0	634.8	272.7	31.4	1.000158
18000.0	519.4	-8.7	-29.5	16.7	684.0	633.6	274.6	33.6	1.000155
18500.0	509.4	-9.7	-30.2	16.9	673.3	632.5	274.3	36.1	1.000153
19000.0	499.5	-10.6	-30.8	17.2	662.7	631.3	273.4	37.6	1.000150
19500.0	489.7	-11.7	-29.4	21.3	652.2	630.1	271.7	37.9	1.000148
20000.0	480.0	-12.7	-28.5	25.4	641.9	628.8	269.9	38.2	1.000146
20500.0	470.6	-13.8	-27.8	29.4	631.8	627.5	267.9	38.8	1.000144
21000.0	461.2	-15.0	-28.3	31.0	622.0	626.1	266.4	39.4	1.000142
21500.0	451.9	-16.2	-29.4	31.0	612.4	624.6	266.2	39.6	1.000139
22000.0	442.7	-17.5	-30.5	31.0	603.0	623.1	266.1	40.2	1.000137
22500.0	433.8	-18.7	-31.6	31.0	593.7	621.5	267.3	39.9	1.000135
23000.0	425.0	-20.0	-32.7	31.0	584.6	620.0	263.9	39.5	1.000133

AX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 3989.00 FEET MSL  
 9 MAY 80  
 ASCENSION NO. 257

UPPER AIR DATA  
 1300020Z57  
 WHITE SANDS

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LONG DEG

TABLE 5 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES (TYP)	SPEED KNOTS	
23500.0	416.4	-21.2	31.0	575.7	618.4	270.5	39.3	1.000130
24000.0	408.0	-22.5	31.0	566.9	616.9	272.5	40.1	1.000128
24500.0	399.8	-23.7	31.0	550.2	615.3	273.9	41.1	1.000126
25000.0	391.5	-25.0	31.8	549.5	613.8	275.2	43.6	1.000124
25500.0	383.4	-26.3	32.7	540.9	612.2	276.3	46.1	1.000122
26000.0	375.4	-27.2	31.5	531.7	611.0	277.0	48.8	1.000120
26500.0	367.6	-27.9	28.8	522.1	610.1	277.5	51.4	1.000117
27000.0	359.9	-28.7	26.1	512.7	609.2	278.2	53.8	1.000115
27500.0	352.3	-30.0	24.9	504.6	607.5	275.0	56.0	1.000113
28000.0	344.8	-31.3	23.8	496.0	605.9	274.4	56.0	1.000111
28500.0	337.5	-32.6	22.6	488.8	604.2	273.7	56.0	1.000109
29000.0	330.3	-34.0	22.0	481.1	602.5	273.0	54.2	1.000103
29500.0	323.2	-35.5	22.0	473.6	600.6	274.1	51.8	1.000106
30000.0	316.2	-36.9	17.4**	466.1	598.4	274.4	49.8	1.000104
30500.0	309.3	-38.3	10.1**	458.7	597.1	274.7	48.6	1.000102
31000.0	302.5	-39.7	2.6**	451.4	595.3	275.0	47.6	1.000101
31500.0	295.8	-40.9		443.0	593.7	275.1	47.2	1.000099
32000.0	289.2	-42.1		436.1	592.2	275.2	47.0	1.000097
32500.0	282.7	-43.3		428.5	590.6	275.0	47.9	1.000095
33000.0	276.4	-44.5		421.1	589.1	274.8	49.2	1.000094
33500.0	270.2	-45.6		413.6	587.6	273.5	54.7	1.000092
34000.0	264.2	-46.8		406.7	586.1	272.5	60.0	1.000091
34500.0	258.2	-47.7		399.0	585.0	271.1	59.5	1.000089
35000.0	252.4	-47.7		389.9	583.0	269.6	59.0	1.000087
35500.0	246.6	-47.7		381.1	581.0	268.9	58.0	1.000085
36000.0	241.0	-48.5		373.7	583.9	264.1	57.3	1.000083
36500.0	235.5	-49.7		367.1	582.4	261.5	58.8	1.000082
37000.0	230.1	-50.9		360.6	580.9	259.1	60.3	1.000080
37500.0	224.8	-51.7		353.6	579.8	258.2	58.3	1.000079
38000.0	219.6	-51.5		345.2	580.0	257.0	55.4	1.000077
38500.0	214.5	-51.4		337.0	580.2	257.0	52.6	1.000075
39000.0	209.6	-51.2		329.0	580.4	257.3	51.3	1.000073
39500.0	204.7	-51.1		321.2	580.6	257.0	50.1	1.000072
40000.0	200.0	-50.9		313.5	580.8	257.4	52.0	1.000070
40500.0	195.4	-50.6		305.9	581.2	257.1	55.2	1.000068
41000.0	190.9	-50.3		298.5	581.0	257.3	59.9	1.000066
41500.0	186.5	-50.2		291.5	581.7	257.7	65.2	1.000065
42000.0	182.3	-50.3		284.9	581.6	257.0	64.7	1.000063
42500.0	178.1	-50.6		278.7	581.2	257.2	62.3	1.000062
43000.0	173.9	-51.2		273.1	580.3	256.5	57.0	1.000061

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.00 FEET MSL  
9 MAY 60 1300 MDT  
ASCENSION NO. 257

UPPER AIR DATA  
1300020257  
WHITE SANDS

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LONG DEG

TABLE 5 (continued)

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION ULGrees (IN)	SPEED KNOTS	INDEX OF REFRACTION
43500.0	169.9	-51.9		267.5	579.5	255.3	50.2	1.000000
44000.0	160.0	-52.6		262.2	578.5	254.0	47.1	1.000058
44500.0	162.1	-53.6		257.3	577.2	254.0	46.9	1.000057
45000.0	158.3	-54.7		252.4	575.8	254.9	46.9	1.000056
45500.0	154.6	-55.7		247.7	574.5	254.9	47.7	1.000055
46000.0	151.0	-56.7		243.0	573.1	254.9	48.5	1.000054
46500.0	147.4	-57.6		238.2	572.0	254.0	48.1	1.000053
47000.0	143.9	-58.4		233.4	570.8	254.4	47.2	1.000052
47500.0	140.4	-59.3		228.6	569.7	254.1	46.2	1.000051
48000.0	137.1	-60.1		224.2	568.6	253.9	45.7	1.000050
48500.0	133.8	-61.0		219.7	567.5	253.0	45.1	1.000049
49000.0	130.5	-61.8		215.2	566.3	253.0	44.7	1.000048
49500.0	127.4	-62.7		210.8	565.1	253.0	44.5	1.000047
50000.0	124.3	-63.6		206.0	564.0	253.2	44.2	1.000046
50500.0	121.2	-64.5		202.4	562.8	253.1	43.8	1.000045
51000.0	118.3	-65.3		198.3	561.6	252.9	43.4	1.000044
51500.0	115.4	-66.2		194.2	560.5	252.9	43.4	1.000043
52000.0	112.5	-66.6		189.7	560.0	252.9	43.6	1.000042
52500.0	109.7	-66.9		185.4	559.4	252.0	44.1	1.000041
53000.0	107.0	-67.3		181.1	558.9	252.0	44.9	1.000040
53500.0	104.3	-67.7		177.0	558.4	252.4	45.0	1.000039
54000.0	101.8	-68.1		172.9	557.8	252.0	46.6	1.000038
54500.0	99.2	-68.4		168.0	557.5	251.0	47.3	1.000037
55000.0	96.8	-68.4		164.0	557.5	251.2	48.2	1.000037
55500.0	94.3	-68.4		160.5	557.5	250.7	49.2	1.000036
56000.0	92.0	-68.4		156.5	557.5	250.1	49.4	1.000035
56500.0	89.7	-66.7		151.4	559.7	246.2	45.7	1.000034
57000.0	87.5	-64.5		146.2	562.7	246.0	42.0	1.000033
57500.0	85.4	-62.3		141.1	565.7	242.4	36.0	1.000031
58000.0	83.3	-60.5		136.5	569.1	235.7	28.0	1.000030
58500.0	81.3	-61.5		133.6	568.0	223.0	20.6	1.000030
59000.0	79.3	-62.4		131.1	565.5	218.5	17.5	1.000029
59500.0	77.4	-63.2		128.4	564.5	221.3	16.5	1.000029
60000.0	75.5	-63.3		125.4	564.3	224.5	15.5	1.000028
60500.0	73.7	-63.5		122.4	564.1	232.0	15.5	1.000027
61000.0	71.9	-63.6		119.5	564.0	240.5	16.3	1.000027
61500.0	70.1	-63.7		116.0	563.8	240.1	17.4	1.000026
62000.0	68.4	-63.2		113.6	564.4	254.0	19.3	1.000025
62500.0	66.8	-62.7		110.6	565.1	250.7	21.4	1.000025
63000.0	65.2	-62.3		107.6	565.8	262.1	22.8	1.000024



UPPER AIR DATA  
1500020257  
WHITE SANDS

STATION ALTITUDE 3949.00 FEET MSL  
9 MAY 50 1300 MDT  
ASCENSION NO. 257

GLODETTIC COORDINATES  
32.40043 LAT LEG  
106.37033 LONG LEG

TABLE 5 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC MLTER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION, DEGREES (TIN)	SPEED KNOTS	INDEX OF REFRACTION
63500.0	63.6	-61.8		104.8	568.4	263.7	21.1	1.0000023
64000.0	62.1	-61.3		102.0	567.1	265.5	19.5	1.0000023
64500.0	60.6	-60.8		99.3	567.8	267.7	15.6	1.0000022
65000.0	59.1	-60.3		96.7	568.4	272.0	8.8	1.0000022
65500.0	57.7	-60.0		94.3	568.7	300.3	2.5	1.0000021
66000.0	56.3	-60.0		92.0	568.8	4.3	2.2	1.0000020
66500.0	54.9	-59.9		89.8	568.9	340.7	2.6	1.0000020
67000.0	53.6	-59.8		87.0	569.0	355.7	3.6	1.0000020
67500.0	52.3	-59.7		85.5	569.1	319.4	3.7	1.0000019
68000.0	51.1	-59.7		83.4	569.2	301.0	3.9	1.0000019
68500.0	49.9	-59.6		81.3	569.4	265.9	4.5	1.0000019
69000.0	48.7	-59.2		79.3	569.6	279.5	4.0	1.0000018
69500.0	47.6	-58.9		77.3	570.3	272.0	3.5	1.0000017
70000.0	46.4	-58.5		75.4	570.8	261.0	3.0	1.0000017
70500.0	45.4	-58.1		73.5	571.2	250.1	3.1	1.0000016
71000.0	44.3	-57.8		71.6	571.7	251.0	3.3	1.0000016
71500.0	43.2	-57.4		69.8	572.2	240.4	3.4	1.0000016
72000.0	42.2	-57.1		68.1	572.6	228.1	2.5	1.0000015
72500.0	41.2	-56.7		66.4	573.1	197.1	2.1	1.0000015
73000.0	40.3	-56.4		64.7	573.6	168.4	2.4	1.0000014
73500.0	39.3	-56.0		63.1	574.0	170.5	2.8	1.0000014
74000.0	38.4	-55.7		61.5	574.5	173.5	3.3	1.0000014
74500.0	37.5	-55.3		60.0	575.0	175.1	3.7	1.0000013
75000.0	36.6	-55.0		58.5	575.4	171.5	4.1	1.0000013
75500.0	35.8	-54.6		57.0	575.9	168.0	4.5	1.0000013
76000.0	34.9	-54.3		55.6	576.4	167.2	4.9	1.0000012
76500.0	34.1	-53.9		54.2	576.8	171.0	5.4	1.0000012
77000.0	33.3	-53.6		52.8	577.3	175.7	5.9	1.0000012
77500.0	32.5	-53.2		51.5	577.8	176.7	6.4	1.0000011
78000.0	31.8	-52.8		50.2	578.2	179.0	6.7	1.0000011
78500.0	31.0	-52.5		49.0	578.7	180.4	7.0	1.0000011
79000.0	30.3	-52.1		47.7	579.2	181.0	7.3	1.0000011
79500.0	29.6	-51.6		46.5	579.8	189.1	6.3	1.0000010
80000.0	28.9	-51.1		45.4	580.6	199.1	5.5	1.0000010
80500.0	28.3	-50.5		44.2	581.3	212.0	4.9	1.0000010
81000.0	27.6	-49.9		43.1	582.1	216.2	3.7	1.0000010
81500.0	27.0	-49.3		42.0	582.9	229.0	2.6	1.0000009
82000.0	26.4	-48.7		40.9	583.6	253.4	1.7	1.0000009
82500.0	25.8	-48.1		39.9	584.4	104.9	1.1	1.0000009
83000.0	25.2	-47.6		38.9	585.1	94.4	4.4	1.0000009

UPPER AIR DATA  
1300020257  
WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL  
9 MAY 80 1300 MNT  
ASCENSION NO. 257

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LONG DEG

TABLE 5 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION, DEGREES (T <sub>10</sub> )	SPEED KNOTS	INDEX OF REFRACTION
83500.0	24.6	-47.0		37.9	585.9	92.8	7.6	1.000000
84000.0	24.1	-46.4		37.0	588.6	98.9	9.4	1.000000
84500.0	23.5	-45.8		36.0	587.4	106.5	10.6	1.000000
85000.0	23.0	-45.6		35.2	587.7	112.4	11.9	1.000000
85500.0	22.5	-45.4		34.4	587.9	115.1	13.1	1.000000
86000.0	22.0	-45.3		33.6	588.1	115.5	13.9	1.000000
86500.0	21.5	-45.1		32.8	588.3	115.5	14.6	1.000000
87000.0	21.0	-45.0		32.0	588.5	117.1	15.6	1.000000
87500.0	20.5	-44.2		31.2	589.5	124.5	16.4	1.000000
88000.0	20.1	-43.4		30.4	590.5	131.0	17.5	1.000000
88500.0	19.6	-43.1		29.7	590.9	136.8	18.8	1.000000
89000.0	19.2	-42.8		29.0	591.3	137.4	19.5	1.000000
89500.0	18.8	-42.5		28.3	591.6	137.2	20.1	1.000000
90000.0	18.3	-42.2		27.7	592.0	137.1	20.7	1.000000
90500.0	17.9	-42.0		27.0	592.3			1.000000
91000.0	17.5	-41.7		26.4	592.7			1.000000
91500.0	17.2	-41.4		25.8	593.1			1.000000
92000.0	16.8	-41.1		25.2	593.4			1.000000

STATION ALTITUDE 3989.00 FEET MSL  
 9 MAY 60  
 ASCENSION NO. 257

MANDATORY LEVELS  
 1300020257  
 WHITE SANDS

GLOMETIC COORDINATES  
 32.40043 LAT DEG  
 106.57033 LONG DEG

TABLE 6

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4820.	22.4	.9	24.	9999.0	9999.0XX
800.0	6533.	17.5	-1.0	28.	9999.0	9999.0XX
750.0	8323.	12.2	-3.6	33.	9999.0	9999.0XX
700.0	10201.	6.6	-6.7	38.	218.6	10.3
650.0	12178.	1.3	-9.1	46.	230.5	12.9
600.0	14271.	-2.7	-23.5	18.	257.4	30.4
550.0	16522.	-5.9	-27.4	10.	263.2	29.1
500.0	18950.	-10.6	-30.8	17.	273.5	37.6
450.0	21580.	-16.5	-29.6	31.	280.2	39.9
400.0	24446.	-23.7	-36.0	31.	273.9	41.0
350.0	27603.	-30.4	-44.1	25.	274.8	50.0
300.0	31127.	-40.2			275.1	47.5
250.0	35129.	-47.5			268.0	50.6
200.0	39900.	-50.9			257.4	51.8
175.0	42763.	-51.1			256.8	55.0
150.0	46013.	-57.0			255.0	40.6
125.0	49745.	-63.4			253.2	44.3
100.0	54179.	-68.4			251.8	47.0
80.0	58634.	-62.1			217.5	10.0
70.0	61327.	-63.7			248.2	17.4
60.0	64453.	-60.6			268.7	13.5
50.0	68189.	-59.6			260.3	4.4
40.0	72804.	-56.3			167.0	2.4
30.0	78858.	-52.0			163.7	7.0
25.0	82774.	-47.4			93.9	3.0
20.0	87657.	-43.3			131.4	17.5

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

GEODETIC COORDINATES  
32.48034 LAT DEG  
106.42307 LON DEG

SIGNIFICANT LEVEL DATA  
130000000.0  
S M R

STATION ALTITUDE 3997.30 FEET MSL  
9 MAY 60  
ASCENSION NO. 80

TABLE 7

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
875.3	3997.3	25.1	1.3	21.0
850.0	4836.2	21.6	.0	25.0
813.6	6073.1	18.1	-2.2	25.0
719.6	9458.4	7.0	-9.3	29.0
700.0	10205.1	7.4	-10.7	16.0
673.8	11232.9	5.7	-10.1	16.0
553.6	16394.8	-6.0	-27.5	17.0
500.0	18984.4	-11.8	-31.0	17.0
474.8	20281.0	-14.1	-32.1	20.0
451.8	21514.0	-16.9	-27.5	39.0
400.0	24477.5	-24.5	-35.2	36.0
367.8	26469.5	-29.4	-30.4	41.0
354.6	27326.6	-30.4	-40.8	35.0
329.2	29051.2	-34.0	-40.0	30.0
305.0	30790.0	-39.4	-50.0	31.0
300.0	31161.7	-40.5		
259.6	34366.8	-46.3		
254.0	34844.3	-46.0		
250.0	35191.0	-46.7		
228.0	37183.7	-51.3		
213.4	38600.4	-51.3		
200.0	39997.7	-48.5		
194.8	40568.9	-48.5		
150.0	46126.1	-57.3		
141.0	47407.6	-60.1		
107.0	52095.0	-67.0		
100.0	54343.0	-67.0		
90.6	56320.0	-64.9		
86.4	57287.1	-59.9		
75.6	60002.9	-65.7		
70.0	61555.8	-63.3		
67.8	62202.1	-64.5		
59.2	64971.9	-59.6		
55.8	66188.6	-61.5		
50.0	68446.5	-59.6		
33.0	77168.3	-53.1		
30.0	79196.7	-53.8		
23.0	84946.3	-45.9		
21.3	86634.9	-46.7		
20.0	88024.5	-44.4		

STATION ALTITUDE 3997.30 FEET MSL  
 9 MAY 80  
 ASCENSION NO. 80

SIGNIFICANT LEVEL DATA  
 1300060000  
 S M R

TABLE 7 (continued)

GEODLTIC COORDINATES  
 32.40034 LAT DEG  
 106.42307 LON DEG

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
18.0 90364.7		
	-43.8	

GEODETIC COORDINATES  
32.48034 LAT DEG  
106.42307 LONG DEG

UPPER AIR DATA  
1300000000  
5 M R  
TABLE 8

STATION ALTITUDE 3997.30 FEET MSL  
9 MAY 60 1300 MDT  
ASCENSION NO. 80

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION, DEGREES (T)	WIND SPEED KNOTS	INDEX OF REFRACTION
3997.3	875.3	25.1	1.3	21.0	1019.4	673.8	270.0	24.1	1.000256
4000.0	875.2	25.1	1.3	21.0	1019.4	673.8	270.0	24.1	1.000256
4500.0	860.1	23.0	1.0	23.4	1006.8	671.4	263.6	23.5	1.000253
5000.0	845.1	21.1	.4	25.0	997.6	669.3	257.0	23.2	1.000250
5500.0	830.3	19.7	-.8	25.0	985.0	667.6	250.4	23.2	1.000245
6000.0	815.7	18.3	-2.0	25.0	972.0	665.9	243.6	23.5	1.000240
6500.0	801.1	16.8	-3.1	25.5	960.4	664.1	237.3	23.7	1.000236
7000.0	786.7	15.2	-4.1	26.1	948.3	662.3	235.7	23.8	1.000232
7500.0	772.6	13.7	-5.1	26.7	936.4	660.5	237.2	23.6	1.000228
8000.0	758.7	12.1	-6.2	27.3	924.7	658.8	236.2	22.8	1.000224
8500.0	745.1	10.6	-7.2	27.9	913.2	656.8	234.8	21.8	1.000220
9000.0	731.7	9.0	-8.3	28.5	901.8	655.0	234.2	23.1	1.000216
9500.0	718.5	7.6	-9.6	28.3	890.2	653.3	233.3	29.2	1.000213
10000.0	705.3	7.5	-14.3	19.6	874.7	652.9	238.0	31.4	1.000205
10500.0	692.4	6.9	-17.1	16.0	860.5	652.2	241.6	29.5	1.000199
11000.0	679.6	6.1	-17.8	16.0	847.2	651.3	246.0	26.2	1.000190
11500.0	667.0	5.1	-18.6	16.1	834.5	650.1	248.3	25.2	1.000183
12000.0	654.4	3.9	-19.5	16.1	822.3	648.7	250.3	25.5	1.000180
12500.0	642.1	2.7	-20.4	16.2	810.3	647.2	250.3	27.7	1.000167
13000.0	630.0	1.5	-21.3	16.3	798.5	645.8	250.8	29.6	1.000163
13500.0	618.1	.3	-22.2	16.4	786.9	644.4	251.2	31.6	1.000160
14000.0	606.4	-.9	-23.1	16.5	775.5	643.0	251.6	33.5	1.000178
14500.0	595.0	-2.1	-24.0	16.6	764.3	641.6	253.1	34.3	1.000175
15000.0	583.8	-3.3	-25.0	16.7	753.2	640.2	254.9	34.6	1.000172
15500.0	572.8	-4.5	-25.9	16.8	742.3	638.7	256.8	34.9	1.000169
16000.0	562.0	-5.7	-26.8	16.9	731.6	637.3	258.7	34.6	1.000167
16500.0	551.3	-6.8	-27.7	17.0	720.6	635.9	260.5	34.0	1.000164
17000.0	540.6	-7.8	-28.5	17.0	709.5	634.7	262.0	32.4	1.000161
17500.0	530.1	-8.8	-29.4	17.0	698.3	633.5	263.4	31.4	1.000158
18000.0	519.7	-9.8	-30.2	17.0	687.3	632.3	264.2	31.9	1.000156
18500.0	509.6	-10.8	-31.0	17.0	676.5	631.1	264.7	33.5	1.000153
19000.0	499.7	-11.8	-31.8	17.0	665.9	629.9	264.7	37.1	1.000151
19500.0	489.8	-12.7	-31.9	18.2	655.0	628.8	264.6	39.8	1.000148
20000.0	480.2	-13.6	-32.0	19.3	644.3	627.7	264.4	41.2	1.000146
20500.0	470.6	-14.6	-30.9	23.4	633.9	626.5	263.4	41.9	1.000144
21000.0	461.3	-15.7	-28.9	31.1	623.9	625.2	261.3	41.7	1.000142
21500.0	452.1	-16.9	-27.6	38.8	614.2	623.8	259.5	41.8	1.000140
22000.0	442.9	-18.1	-28.8	38.5	604.7	622.3	258.3	42.4	1.000138
22500.0	433.9	-19.4	-30.1	38.0	595.4	620.7	257.0	43.0	1.000136
23000.0	425.0	-20.7	-31.4	37.5	586.3	619.1	259.1	43.5	1.000133

GEODETIC COORDINATES  
32.40034 LAT DEG  
106.42307 LONG DEG

UPPER AIR DATA  
1300060000  
S M R  
TABLE 8 (continued)

STATION ALTITUDE 3997.30 FEET MSL  
9 MAY 80  
ASCENSION NO. 80

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION, DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	416.4	-22.0	37.0	577.4	617.5	261.0	44.0	1.000131
24000.0	407.9	-23.3	36.5	568.5	615.9	264.4	44.4	1.000129
24500.0	399.6	-24.6	36.1	559.8	614.3	267.8	44.9	1.000127
25000.0	391.3	-25.8	37.3	550.9	612.8	271.0	44.9	1.000124
25500.0	383.1	-27.0	38.6	542.1	611.3	274.5	45.7	1.000122
26000.0	375.1	-28.2	39.8	533.5	609.7	275.2	46.2	1.000120
26500.0	367.3	-29.4	40.8	524.9	608.3	274.5	51.1	1.000118
27000.0	359.6	-30.0	37.3	515.1	607.5	272.0	54.4	1.000116
27500.0	352.0	-30.8	34.5	505.9	606.5	271.3	55.6	1.000114
28000.0	344.5	-32.0	33.0	497.0	605.4	270.3	55.7	1.000112
28500.0	337.1	-33.3	31.6	489.5	603.4	269.8	54.6	1.000110
29000.0	329.9	-34.5	30.1	481.5	601.9	269.6	53.0	1.000108
29500.0	322.8	-35.8	30.3	473.8	600.2	269.4	51.4	1.000106
30000.0	315.8	-37.2	30.5	466.2	598.4	269.2	49.6	1.000104
30500.0	308.9	-38.6	30.8	458.8	596.7	268.6	49.2	1.000103
31000.0	302.2	-40.0	13.5**	451.5	594.8	268.4	49.0	1.000101
31500.0	295.5	-41.1		443.6	593.4	268.1	50.1	1.000099
32000.0	288.9	-42.0		435.4	592.3	267.8	51.3	1.000097
32500.0	282.4	-42.9		427.3	591.1	267.6	53.0	1.000095
33000.0	276.1	-43.8		419.4	590.0	267.8	56.2	1.000093
33500.0	270.0	-44.7		411.7	588.8	267.4	58.6	1.000092
34000.0	263.9	-45.6		404.1	587.6	266.6	61.0	1.000090
34500.0	258.0	-46.2		396.1	586.9	266.2	62.5	1.000088
35000.0	252.2	-46.3		387.3	586.7	265.4	61.8	1.000086
35500.0	246.5	-47.4		380.3	585.3	264.6	61.1	1.000085
36000.0	240.8	-48.6		373.0	583.8	263.7	60.3	1.000083
36500.0	235.3	-49.7		366.9	582.3	262.9	59.5	1.000082
37000.0	229.9	-50.9		360.4	580.8	262.4	60.3	1.000080
37500.0	224.7	-51.3		352.8	580.3	262.1	61.9	1.000079
38000.0	219.5	-51.3		344.6	580.3	261.5	61.7	1.000077
38500.0	214.4	-51.3		336.7	580.3	260.6	61.0	1.000075
39000.0	209.5	-50.5		327.8	581.3	259.7	58.6	1.000073
39500.0	204.7	-49.5		316.8	582.6	258.2	55.5	1.000071
40000.0	200.0	-48.5		310.1	583.9	257.2	55.7	1.000069
40500.0	195.4	-48.5		296.9	583.0	256.1	58.5	1.000066
41000.0	190.9	-49.2		291.0	582.0	256.1	59.6	1.000065
41500.0	186.5	-50.0		285.3	581.0	256.0	60.8	1.000064
42000.0	182.1	-50.8		279.7	579.9	255.6	60.4	1.000062
42500.0	177.9	-51.6		274.1	578.9	255.5	58.5	1.000061
43000.0	173.8	-52.3						

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3997.30 FEET MSL  
9 MAY 80 1300 MDT  
ASCENSION NO. 80

UPPER AIR DATA  
1500060020  
S M R

GEODETIC COORDINATES  
32.48034 LAT LEG  
106.42307 LONG LEG

TABLE 8 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
43500.0	169.7	-53.1		268.7	577.8	255.2	56.7	1.000000
44000.0	165.8	-53.9		263.4	576.8	254.6	55.3	1.000009
44500.0	161.9	-54.7		258.2	575.8	254.4	54.3	1.000018
45000.0	158.2	-55.5		253.2	574.7	254.0	53.3	1.000026
45500.0	154.5	-56.3		248.2	573.7	253.6	52.1	1.000035
46000.0	150.9	-57.1		243.3	572.6	253.1	50.9	1.000044
46500.0	147.3	-58.1		238.7	571.3	252.7	49.6	1.000053
47000.0	143.8	-59.2		234.2	569.8	252.2	48.2	1.000062
47500.0	140.4	-60.2		229.6	568.5	251.7	46.8	1.000071
48000.0	136.9	-60.8		224.7	567.7	251.3	47.6	1.000080
48500.0	133.6	-61.4		219.8	566.8	250.9	48.3	1.000089
49000.0	130.3	-62.1		215.1	566.0	250.7	48.9	1.000098
49500.0	127.2	-62.7		210.5	565.2	250.5	49.3	1.000107
50000.0	124.1	-63.3		205.9	564.4	250.6	49.6	1.000116
50500.0	121.0	-63.9		201.5	563.5	251.1	49.3	1.000125
51000.0	118.1	-64.5		197.2	562.7	251.7	49.0	1.000134
51500.0	115.2	-65.2		192.9	561.9	252.2	49.8	1.000143
52000.0	112.4	-65.8		188.8	561.0	252.7	50.8	1.000152
52500.0	109.6	-66.4		184.7	560.2	253.1	51.8	1.000161
53000.0	107.0	-67.0		180.8	559.4	253.6	52.7	1.000170
53500.0	104.3	-67.0		176.3	559.4	253.0	53.5	1.000179
54000.0	101.7	-67.0		171.9	559.4	252.9	54.3	1.000188
54500.0	99.2	-66.8		167.5	559.6	252.7	51.4	1.000197
55000.0	96.8	-66.3		163.0	560.3	252.5	48.6	1.000206
55500.0	94.4	-65.8		158.6	561.0	251.7	43.3	1.000215
56000.0	92.1	-65.2		154.2	561.7	249.9	36.0	1.000224
56500.0	89.8	-64.0		149.6	563.5	247.0	29.1	1.000233
57000.0	87.6	-61.4		144.1	568.9	241.3	23.9	1.000242
57500.0	85.5	-60.4		140.0	568.3	232.5	19.1	1.000251
58000.0	83.4	-61.4		137.3	566.9	223.9	17.1	1.000260
58500.0	81.4	-62.5		134.6	565.4	219.1	16.9	1.000269
59000.0	79.4	-63.6		132.0	564.0	212.2	17.0	1.000278
59500.0	77.5	-64.6		129.5	562.6	213.0	18.1	1.000287
60000.0	75.6	-65.7		127.0	561.1	216.6	19.8	1.000296
60500.0	73.8	-64.9		123.4	562.2	219.6	21.6	1.000305
61000.0	72.0	-64.2		119.9	563.2	223.3	23.2	1.000314
61500.0	70.2	-63.4		116.6	564.2	221.0	25.1	1.000323
62000.0	68.5	-64.1		114.1	563.2	236.0	27.2	1.000332
62500.0	66.8	-64.0		111.3	563.4	239.0	26.2	1.000341
63000.0	65.2	-63.1		108.1	564.6	242.1	24.6	1.000350



STATION ALTITUDE 3997.30 FEET MSL  
9 MAY 80  
ASCENSION NO. 80

UPPER AIR DATA  
1300060000  
S M K  
TABLE 8 (continued)

GEODETIC COORDINATES  
32.42034 LAT DEG  
100.42307 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION, DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
63500.0	63.6	-62.2		105.1	565.8	245.5	23.5	1.000023
64000.0	62.1	-61.3		102.1	567.0	240.5	10.5	1.000023
64500.0	60.6	-60.4		99.2	568.2	248.0	13.4	1.000022
65000.0	59.1	-59.6		96.5	569.2	251.2	8.3	1.000021
65500.0	57.7	-60.4		94.5	568.2	250.6	4.5	1.000021
66000.0	56.3	-61.2		92.6	567.2	302.1	1.1	1.000021
66500.0	55.0	-61.2		90.4	567.1	43.0	2.5	1.000020
67000.0	53.6	-60.8		88.0	567.7	35.6	2.0	1.000020
67500.0	52.4	-60.4		85.7	568.2	42.9	1.5	1.000019
68000.0	51.1	-60.0		83.5	568.8	352.3	1.3	1.000019
68500.0	49.9	-59.6		81.3	569.4	317.2	1.8	1.000018
69000.0	48.7	-59.2		79.3	569.9	301.3	2.7	1.000018
69500.0	47.6	-58.8		77.3	570.4	294.2	2.7	1.000017
70000.0	46.4	-58.4		75.3	570.8	260.0	2.0	1.000017
70500.0	45.3	-58.1		73.4	571.3	269.4	1.4	1.000016
71000.0	44.3	-57.7		71.6	571.8	213.8	1.7	1.000016
71500.0	43.2	-57.3		69.8	572.3	190.2	3.5	1.000016
72000.0	42.2	-57.0		68.0	572.8	163.0	5.4	1.000015
72500.0	41.2	-56.6		66.3	573.3	160.1	6.6	1.000015
73000.0	40.2	-56.2		64.8	573.8	178.2	7.3	1.000014
73500.0	39.3	-55.8		63.0	574.3	170.7	7.9	1.000014
74000.0	38.4	-55.5		61.4	574.8	162.4	7.8	1.000014
74500.0	37.5	-55.1		59.9	575.3	192.1	7.6	1.000013
75000.0	36.6	-54.7		58.4	575.8	202.1	7.6	1.000013
75500.0	35.7	-54.3		56.9	576.3	205.4	7.1	1.000013
76000.0	34.9	-54.0		55.5	576.8	208.5	6.4	1.000012
76500.0	34.1	-53.6		54.1	577.3	207.9	5.7	1.000012
77000.0	33.3	-53.2		52.7	577.7	195.5	4.1	1.000012
77500.0	32.5	-53.2		51.5	577.8	158.2	3.0	1.000011
78000.0	31.7	-53.4		50.3	577.5	113.8	3.9	1.000011
78500.0	31.0	-53.6		49.2	577.3	102.1	4.6	1.000011
79000.0	30.3	-53.7		48.1	577.1	106.8	4.0	1.000011
79500.0	29.6	-53.4		46.9	577.5	112.9	3.4	1.000010
80000.0	28.9	-52.7		45.7	578.4	122.0	2.9	1.000010
80500.0	28.2	-52.0		44.5	579.3	134.9	2.6	1.000010
81000.0	27.6	-51.3		43.3	580.2	149.9	2.4	1.000010
81500.0	27.0	-50.6		42.2	581.1	163.3	2.5	1.000009
82000.0	26.4	-49.9		41.1	582.0	143.1	2.6	1.000009
82500.0	25.8	-49.3		40.1	582.9	123.2	3.0	1.000009
83000.0	25.2	-48.6		39.0	583.8	109.7	3.7	1.000009

GEODETIC COORDINATES  
32.48034 LAT DEG  
106.42307 LONG DEG

UPPER AIR DATA  
1300060000  
S M R  
TABLE 8 (continued)

STATION ALTITUDE 3997.30 FEET MSL  
9 MAY 60 1300 MDT  
ASCENSION NO. 80

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION, DEGREES (T)	SPEED KNOTS	INDEX OF REFRACTION
83500.0	24.6	-47.9		30.0	584.7	94.4	6.1	1.0000008
84000.0	24.0	-47.2		37.0	585.6	87.0	9.3	1.0000008
84500.0	23.5	-46.5		38.1	585.5	83.4	12.6	1.0000008
85000.0	22.9	-45.9		35.2	587.2	83.8	13.7	1.0000008
85500.0	22.4	-45.2		34.4	588.9	88.4	11.8	1.0000008
86000.0	21.9	-44.4		33.7	588.8	94.6	10.0	1.0000007
86500.0	21.4	-46.6		33.0	588.3	103.7	8.4	1.0000007
87000.0	21.0	-46.1		32.1	587.0	118.2	8.1	1.0000007
87500.0	20.5	-45.3		31.3	588.1	132.8	8.4	1.0000007
88000.0	20.0	-44.4		30.5	589.2	145.5	9.3	1.0000007
88500.0	19.6	-44.3		29.8	589.4			1.0000007
89000.0	19.1	-44.1		29.1	589.5			1.0000006
89500.0	18.7	-44.0		28.5	589.7			1.0000006
90000.0	18.3	-43.9		27.8	589.9			1.0000006

STATION ALTITUDE 3997.30 FEET MSL  
9 MAY 80  
ASCENSION NO. 80

MANDATORY LEVELS  
1300000000  
S M R

GEODETIC COORDINATES  
32.48034 LAT DEG  
106.42307 LONG DEG

TABLE 9

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIN. DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	GEOPOT. CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4833.	21.6	.6	25.	259.2	23.2
800.0	6540.	16.7	-3.1	26.	236.7	23.7
750.0	8324.	11.1	-6.0	28.	235.2	21.8
700.0	10195.	7.4	-16.7	10.	239.1	32.0
650.0	12182.	3.4	-19.0	16.	250.4	20.3
600.0	14292.	-1.6	-23.6	17.	252.4	34.1
550.0	16541.	-6.9	-27.8	17.	260.6	33.8
500.0	18958.	-11.0	-31.8	17.	204.7	30.9
450.0	21580.	-17.1	-27.8	39.	259.3	41.9
400.0	24437.	-24.5	-35.2	36.	267.5	44.9
350.0	27582.	-31.1	-41.7	34.	271.0	53.6
300.0	31100.	-40.5			269.3	49.2
250.0	35115.	-46.7			265.1	61.5
200.0	39902.	-48.5			257.2	53.6
175.0	42766.	-52.1			255.6	59.1
150.0	46002.	-57.3			253.0	50.6
125.0	49725.	-63.1			250.4	49.7
100.0	54175.	-67.0			252.8	54.5
80.0	58667.	-63.2			214.2	17.0
70.0	61344.	-63.3			231.3	23.2
60.0	64463.	-60.1			240.7	11.7
50.0	68189.	-59.6			321.6	1.7
40.0	72806.	-56.1			178.0	7.3
30.0	78858.	-53.8			108.4	3.8
25.0	82749.	-48.4			108.0	3.8
20.0	87611.	-44.4			145.0	9.2

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4126.59 FEET MSL  
9 MAY 60  
ASCENSION NO. 152

SIGNIFICANT LEVEL DATA  
1300010152  
HOLLOMAN  
TABLE 10

GEODETIC COORDINATES  
32.80865 LAT DEG  
106.09965 LON DEG

PRESSURE GEOMETRIC		TEMPERATURE		REL. HUM.
MILLIBARS	ALTITUDE MSL FEET	AIR DEGREES	DEWPOINT CENTIGRADE	
871.5	4126.6	25.1	-3.5	15.0
861.4	4460.2	21.7	7.5	40.0
850.0	4839.3	21.0	7.5	42.0
740.2	8693.7	9.9	-2.4	42.0
700.0	10206.8	5.6	-5.4	45.0
690.2	10585.8	5.6	-7.2	39.0
666.8	11509.1	3.4	-9.5	38.0
562.6	15951.2	-7.3	-19.5	37.0
500.0	18945.1	-12.3	-23.9	37.0
488.2	19545.2	-12.6	-23.0	39.0
460.0	21027.9	-16.7	-24.4	51.0
416.6	23448.2	-22.9	-30.0	48.0
400.0	24425.6	-24.7	-32.5	48.0
397.5	24575.7	-25.1	-33.1	47.0
388.6	25117.8	-24.5	-33.7	42.0
354.6	27288.9	-29.9	-39.1	40.0
335.2	28597.1	-34.1	-42.9	40.0
300.0	31122.0	-40.2	-48.5	40.0
292.6	31681.6	-41.4	-49.0	40.0
250.0	35152.5	-47.5		
245.8	35521.4	-47.5		
212.2	38661.3	-56.0		
200.0	39893.6	-59.0		
193.4	40587.2	-59.0		
180.2	42066.9	-53.6		
168.8	43456.1	-52.3		
150.0	45943.3	-57.7		
140.0	47372.5	-59.6		
129.4	48991.2	-61.0		
124.9	49717.4	-60.5		
100.0	54202.1	-68.3		
84.9	57435.4	-69.3		
74.5	60055.2	-62.3		
70.0	61323.5	-63.0		
66.0	62519.7	-62.9		
61.4	63906.1	-63.7		
59.0	64797.7	-61.8		
54.6	66380.6	-62.3		
50.0	69192.4	-58.5		
47.8	69126.1	-59.0		

STATION ALTITUDE 4126.59 FEET MSL  
 9 MAY 80 1300 MDT  
 ASCENSION, NO. 152

SIGNIFICANT LEVEL DATA  
 1500010152  
 HOLLOWMAN

GEODETIC COORDINATES  
 32.88865 LAT DEG  
 106.09965 LONG DEG

TABLE 10 (continued)

PRESSURE GEOMETRIC ALTITUDE MILLIBARS NSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
43.6 71043.1		-56.6

STATION ALTITUDE 4126.59 FEET MSL  
9 MAY 60 1300 MDT  
ASCENSION NO. 152

UPPER AIR DATA  
1300010152  
HOLLONAH

GEODETIC COORDINATES  
32.86865 LAT DEG  
106.05965 LONG DEG

TABLE 11

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND AKTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES (TN)	SPEED KNOTS	
4126.6	871.5	25.1	-3.3	15.0	1015.8	673.5	300.0	14.0	1.000247
4500.0	860.2	21.6	7.5	40.2	1011.9	670.4	292.9	13.5	1.000271
5000.0	845.1	20.5	7.2	42.0	997.9	669.2	282.7	13.1	1.000267
5500.0	830.1	19.1	5.9	42.0	985.3	667.4	272.5	13.2	1.000261
6000.0	815.3	17.7	4.6	42.0	972.9	665.7	262.4	13.7	1.000255
6500.0	800.8	16.2	3.3	42.0	960.0	663.9	253.5	14.6	1.000249
7000.0	786.6	14.8	2.0	42.0	948.5	662.2	245.7	15.8	1.000244
7500.0	772.6	13.3	.7	42.0	936.5	660.4	249.0	16.7	1.000238
8000.0	758.9	11.9	-6	42.0	924.7	658.7	255.8	17.7	1.000233
8500.0	745.4	10.5	-1.9	42.0	913.1	657.0	261.6	18.9	1.000229
9000.0	731.9	9.0	-3.0	42.6	901.3	655.3	260.1	19.7	1.000224
9500.0	718.5	7.6	-4.0	43.6	889.4	653.6	258.1	20.4	1.000220
10000.0	705.4	6.2	-5.0	44.6	877.7	651.9	254.0	20.3	1.000216
10500.0	692.4	5.6	-6.8	40.4	863.6	651.1	250.4	20.0	1.000210
11000.0	679.6	4.6	-8.3	38.6	850.8	649.9	245.2	21.1	1.000206
11500.0	667.0	3.4	-9.5	38.0	838.0	648.4	241.5	22.4	1.000202
12000.0	654.4	2.2	-10.6	37.9	826.0	647.0	240.2	23.6	1.000198
12500.0	642.0	1.0	-11.8	37.8	814.6	645.5	239.3	24.8	1.000194
13000.0	629.8	-2	-12.9	37.7	802.7	644.1	240.6	26.2	1.000190
13500.0	617.9	-1.4	-14.0	37.6	791.1	642.6	242.2	27.7	1.000187
14000.0	606.2	-2.6	-15.1	37.4	779.6	641.2	242.5	29.9	1.000183
14500.0	594.7	-3.8	-16.2	37.3	768.3	639.7	242.0	32.3	1.000179
15000.0	583.4	-5.0	-17.3	37.2	757.2	638.3	243.7	33.9	1.000177
15500.0	572.4	-6.2	-18.4	37.1	746.3	636.8	245.5	35.0	1.000174
16000.0	561.5	-7.4	-19.5	37.0	735.4	635.4	248.1	35.3	1.000171
16500.0	550.6	-8.2	-20.3	37.0	723.3	634.4	251.2	35.1	1.000168
17000.0	539.8	-9.1	-21.0	37.0	711.5	633.4	254.1	34.9	1.000165
17500.0	529.3	-9.9	-21.8	37.0	699.9	632.3	258.8	34.9	1.000162
18000.0	519.0	-10.7	-22.5	37.0	688.4	631.3	258.5	36.9	1.000159
18500.0	508.8	-11.6	-23.3	37.0	677.2	630.3	260.5	40.1	1.000156
19000.0	498.9	-12.3	-23.9	37.2	665.9	629.4	262.5	44.4	1.000153
19500.0	489.1	-12.6	-23.7	38.8	653.4	629.1	262.7	45.1	1.000151
20000.0	479.4	-13.9	-23.8	42.7	643.6	627.5	262.4	44.9	1.000148
20500.0	469.8	-15.2	-24.0	46.7	634.2	625.9	261.1	43.6	1.000146
21000.0	460.5	-16.6	-24.4	50.8	624.9	624.2	259.8	43.5	1.000144
21500.0	451.2	-17.9	-25.7	50.4	615.4	622.6	258.5	43.8	1.000141
22000.0	442.1	-19.2	-27.0	49.8	606.0	621.0	258.3	43.4	1.000139
22500.0	433.1	-20.5	-28.3	49.2	596.8	619.4	259.1	42.5	1.000136
23000.0	424.3	-21.8	-29.6	48.6	587.7	617.8	261.6	42.3	1.000134
23500.0	415.7	-23.0	-30.9	48.0	578.7	616.3	260.0	43.4	1.000132

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GEODETIC COORDINATES  
32.08805 LAT DEG  
106.09905 LONG DEG

TABLE 11 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION, DEGREES (T)	SPEED KNOTS	INDEX OF REFRACTION
24000.0	407.1	-23.9	-31.8	568.9	615.2	269.1	48.0	1.000129
24500.0	398.8	-24.9	-32.8	559.4	613.9	271.3	53.7	1.000127
25000.0	390.5	-24.6	-33.5	547.2	614.3	272.6	59.0	1.000124
25500.0	382.4	-25.5	-34.6	537.6	613.2	272.9	59.4	1.000122
26000.0	374.4	-26.7	-35.9	529.1	611.7	274.0	51.9	1.000120
26500.0	366.6	-27.9	-37.1	520.7	610.1	274.1	47.4	1.000118
27000.0	358.9	-29.2	-38.4	512.4	608.6	273.2	46.8	1.000116
27500.0	351.4	-30.6	-39.7	504.5	608.8	272.2	49.2	1.000114
28000.0	343.9	-32.2	-41.2	497.1	604.8	271.6	50.7	1.000112
28500.0	336.6	-33.8	-42.6	489.6	602.8	272.6	49.1	1.000110
29000.0	329.3	-35.1	-43.8	481.8	601.2	273.6	47.3	1.000108
29500.0	322.2	-36.3	-44.9	473.7	599.6	275.2	45.3	1.000106
30000.0	315.2	-37.5	-46.0	465.8	598.1	278.2	44.2	1.000104
30500.0	308.3	-38.7	-47.1	458.1	596.5	279.6	43.9	1.000103
31000.0	301.6	-39.9	-48.2	450.4	595.0	279.7	43.9	1.000101
31500.0	295.0	-41.0	-49.3	442.6	593.6	279.2	43.8	1.000099
32000.0	288.4	-42.0	-51.0	434.5	592.4	278.4	43.8	1.000097
32500.0	281.9	-42.8	-53.2	426.4	591.2	278.4	43.8	1.000095
33000.0	275.6	-43.7	-55.7	418.5	590.1	278.6	43.8	1.000093
33500.0	269.4	-44.6	-58.5	410.7	589.0	278.6	44.9	1.000092
34000.0	263.4	-45.5	-62.0	403.0	587.8	278.5	45.9	1.000090
34500.0	257.5	-46.4	-66.9	395.5	586.7	277.5	45.9	1.000088
35000.0	251.7	-47.2	-77.2	388.2	585.6	276.5	45.7	1.000086
35500.0	246.0	-47.5		379.8	585.2	275.4	45.5	1.000085
36000.0	240.4	-48.8		373.2	583.5	274.1	45.0	1.000083
36500.0	234.8	-50.1		366.8	581.8	272.8	44.6	1.000082
37000.0	229.4	-51.5		360.5	580.0	271.5	44.1	1.000080
37500.0	224.1	-52.9		354.3	578.2	270.2	43.4	1.000079
38000.0	218.9	-54.2		348.3	576.4	268.9	42.8	1.000078
38500.0	213.8	-55.6		342.3	574.7	267.2	43.4	1.000076
39000.0	208.8	-56.8		336.2	573.0	265.2	45.1	1.000075
39500.0	203.8	-58.0		330.1	571.4	263.4	47.8	1.000074
40000.0	199.0	-59.0		323.7	570.1	261.9	51.3	1.000072
40500.0	194.2	-59.0		315.9	570.1	259.9	53.9	1.000070
41000.0	189.6	-57.5		306.3	572.1	257.6	55.6	1.000068
41500.0	185.1	-55.7		296.6	574.5	255.5	57.9	1.000066
42000.0	180.8	-53.8		287.2	576.9	254.8	59.2	1.000064
42500.0	176.6	-53.2		279.0	577.8	253.7	57.5	1.000062
43000.0	172.5	-52.7		272.6	578.4	252.9	58.1	1.000061
43500.0	168.4	-52.4		265.8	578.8	252.4	59.1	1.000059

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4126.59 FEET MSL  
9 MAY 80  
ASCENDING 0.0. 152

UPPER AIR DATA  
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GEODETIC COORDINATES  
32.08865 LAT 116  
106.09905 LONG DEG

TABLE 11 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
4400.0	164.5	-53.5		260.9	577.4	252.1	59.8	1.000058
4450.0	160.6	-54.6		256.0	576.0	251.0	60.5	1.000057
4500.0	156.9	-55.7		251.3	574.5	250.0	57.6	1.000056
4550.0	153.2	-56.7		246.6	573.1	249.0	54.8	1.000055
4600.0	149.6	-57.8		242.0	571.7	248.0	52.7	1.000054
4650.0	146.0	-58.4		236.9	570.8	247.0	51.4	1.000053
4700.0	142.5	-59.1		232.0	570.0	247.0	52.3	1.000052
4750.0	139.1	-59.7		227.1	569.2	248.1	55.0	1.000051
4800.0	135.8	-60.1		222.1	568.6	249.1	57.6	1.000049
4850.0	132.5	-60.6		217.2	568.0	250.4	60.1	1.000048
4900.0	129.3	-61.0		212.4	567.4	251.5	60.4	1.000047
4950.0	126.2	-60.6		206.9	567.9	252.7	58.5	1.000046
5000.0	123.2	-61.0		202.2	567.4	254.0	56.6	1.000045
5050.0	120.1	-61.9		198.1	566.3	254.0	54.5	1.000044
5100.0	117.2	-62.7		194.0	565.1	254.0	52.3	1.000043
5150.0	114.3	-63.6		190.1	563.9	255.0	50.1	1.000042
5200.0	111.5	-64.5		186.2	562.8	254.3	48.2	1.000041
5250.0	108.8	-65.3		182.4	561.6	253.2	46.5	1.000041
5300.0	106.1	-66.2		178.7	560.4	252.1	44.8	1.000040
5350.0	103.5	-67.1		175.0	559.2	250.7	42.1	1.000039
5400.0	101.0	-67.9		171.5	558.1	248.7	38.0	1.000038
5450.0	98.5	-68.4		167.6	557.5	248.2	33.9	1.000037
5500.0	96.0	-68.5		163.5	557.3	243.5	30.7	1.000036
5550.0	93.6	-68.7		159.6	557.0	240.6	28.3	1.000036
5600.0	91.3	-68.9		155.7	556.8	237.9	27.9	1.000035
5650.0	89.0	-69.0		151.9	556.6	236.2	29.7	1.000034
5700.0	86.8	-69.2		148.2	556.4	234.9	31.4	1.000033
5750.0	84.6	-69.1		144.5	556.5	234.2	33.1	1.000032
5800.0	82.5	-67.8		140.0	556.3	233.6	34.8	1.000031
5850.0	80.5	-66.5		135.7	560.1	233.1	32.9	1.000030
5900.0	78.5	-65.1		131.5	561.9	232.5	30.4	1.000029
5950.0	76.6	-63.8		127.4	563.7	231.6	27.8	1.000028
6000.0	74.7	-62.4		123.5	565.5	230.6	24.4	1.000028
6050.0	72.9	-62.5		120.6	565.4	229.6	21.1	1.000027
6100.0	71.1	-62.8		117.8	565.0	229.1	18.9	1.000026
6150.0	69.4	-63.0		115.0	564.8	229.9	18.0	1.000026
6200.0	67.7	-62.9		112.2	564.8	230.6	17.2	1.000025
6250.0	66.1	-62.9		109.5	564.9	233.0	16.5	1.000024
6300.0	64.5	-63.2		106.9	564.5	237.0	15.9	1.000024
6350.0	62.9	-63.4		104.5	564.2	241.7	15.3	1.000023



STATION ALTITUDE 4126.59 FEET MSL  
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UPPER AIR DATA  
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GEODETIC COORDINATES  
32.86865 LAT 116  
106.09905 LONG 116

TABLE 11 (continued)

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA DIRECTION, DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
					KNOTS	FEET			
64000.0	61.4	-63.7		102.0	563.9		240.9	13.3	1.000023
64500.0	59.9	-62.5		99.0	565.4		253.9	11.5	1.000022
65000.0	58.4	-61.9		96.3	568.3		261.4	9.9	1.000021
65500.0	57.0	-62.0		94.1	568.1		269.6	8.4	1.000021
66000.0	55.6	-62.2		91.9	565.9		261.0	7.2	1.000020
66500.0	54.3	-62.0		89.6	568.0		290.0	6.0	1.000020
67000.0	53.0	-61.0		87.0	567.4		303.1	5.0	1.000019
67500.0	51.7	-60.0		84.5	568.8		330.1	3.8	1.000018
68000.0	50.5	-58.9		82.1	570.2		15.9	3.8	1.000018
68500.0	49.3	-58.7		80.0	570.6		44.1	5.6	1.000018
69000.0	48.1	-58.9		78.2	570.2		58.1	7.5	1.000017
69500.0	47.0	-58.5		76.2	570.7		66.1	9.7	1.000017
70000.0	45.8	-57.9		74.2	571.6				1.000017
70500.0	44.8	-57.3		72.2	572.4				1.000016
71000.0	43.7	-56.7		70.3	573.2				1.000016

STATION ALTITUDE 4126.59 FEET MSL  
9 MAY 50 1300 MDT  
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MANDATORY LEVELS  
1300010152  
HOLLOMAN

GEODETIC COORDINATES  
32.60805 LAT DEG  
106.09905 LON DEG

TABLE 12

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4836.	21.0	7.6	42.	286.1	13.2
800.0	6543.	16.1	3.2	42.	252.7	14.7
750.0	8327.	11.0	-1.4	42.	259.9	18.4
700.0	10197.	5.6	-5.4	45.	252.9	20.1
650.0	12175.	1.8	-11.0	38.	239.8	24.0
600.0	14273.	-3.2	-15.7	37.	242.0	31.3
550.0	16510.	-8.3	-20.3	37.	251.3	35.1
500.0	18919.	-12.3	-23.9	37.	262.1	43.8
450.0	21538.	-18.1	-25.8	50.	258.3	43.8
400.0	24386.	-24.7	-32.5	46.	271.0	52.6
350.0	27546.	-30.9	-40.0	40.	272.0	49.6
300.0	31061.	-40.2	-48.5	40.	279.7	43.9
250.0	35077.	-47.5			276.2	45.7
200.0	39799.	-59.0			262.2	50.4
175.0	42582.	-53.0			253.4	57.4
150.0	45821.	-57.7			249.0	52.9
125.0	49560.	-60.5			253.2	57.8
100.0	54037.	-68.3			247.9	50.5
80.0	58425.	-66.1			233.0	32.5
70.0	61116.	-63.0			229.6	18.4
60.0	64227.	-62.6			252.7	11.8
50.0	67939.	-58.5			27.5	4.3

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

DATE  
FILMED  
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